Montana Fish, Wildlife & Parks

Region Four
4600 Giant Springs Road
Great Falls, MT 59405

March 9, 2007

To Whom It May Concern:

Montana Fish, Wildlife and Parks, Region Four has prepared the enclosed draft environmental assessment (EA) for the purpose of improving the angling quality at Bair Reservoir, Meagher County through mechanical sucker removal.

The draft is out for public review. Please direct your questions or comments to Anne Tews, P.O. Box 938, Lewistown, MT 59457, 406 538-4658 ext. 227 or email to antews@mt.gov. Comments must be received by Tuesday, April 10.

Sincerely:

Gary Bertellotti
Regional Supervisor

Montana Fish, Wildlife and Parks

ENVIRONMENTAL REVIEW OF
WHITE SUCKER SUPPRESSION IN BAIR RESERVOIR

Project: White sucker suppression in Bair Reservoir (Meagher County)
Division: Fisheries Division

Description of Project: White suckers will be captured and dispatched. Dispatched sucker carcasses will be returned to the reservoir.

Potential Impact on the Physical Environment

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Terrestrial & aquatic life and habitats			X			X
2. Water quality, quantity & distribution			X			X
3. Geology & soil quality, stability and moisture				X		
4. Vegetative cover, quantity & quality				X		
5. Aesthetics			X			X
6. Air quality				X		
7. Unique, endangered, fragile or limited environmental resources				X		X
8. Demands on environmental resources of land, water, air & energy				X		
9. Historical & archaeological sites				X		

Potential Impacts on the Human Environment

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Social structures & mores				X		
2. Cultural uniqueness & diversity				X		
3. Local & sate tax base & tax revenue				X		
4. Agricultural or industrial production				X		
5. Human health				X		
6. Quantity & distribution of community & personal income				X		
7. Access to & quality of recreation and wilderness activities			X			X
8. Quantity & distribution of employment				X		
9. Distribution and density of population & housing				X		
10. Demands for government services				X		X
11. Industrial and commercial activity				X		
12. Demands for energy				X		
13. Locally adopted environmental plans & goals				X		
14. Transportation networks & traffic flow				X		

Other groups or agencies contacted or which may have overlapping jurisdiction: Public notification via the State of Montana web site http://fwp.mt.gov/publicnotices/.

List of Individuals or groups contributing to this EA: Christopher Horn, MFWP, summarized historical data from Bair.

Recommendation concerning preparation of EIS: No EIS Required. Action expected to be minor.

EA prepared by: Anne Tews, Fisheries Biologist, Montana Fish, Wildlife & Parks

Date: March 9, 2007

Comments will be accepted until: April 10, 2007

Comments should be sent to:

Anne Tews
Montana Fish, Wildlife and Parks
P.O. Box 938,Lewistown, MT 59457
antews@mt.gov

ENVIRONMENTAL ASSESSMENT
WHITE SUCKER SUPPRESSION IN BAIR RESERVOIR

I. Description of proposed action

A. Description of water body and action.

Name:	Bair Reservoir	Location:	T10 R9 S35
Water Code:	18-7750	County:	Meagher

Bair Reservoir is an on-stream irrigation reservoir in the North Fork Musselshell drainage, approximately 17 miles east of White Sulphur Springs, MT. It is about 270 acres at full pool. Montana Fish, Wildlife & Parks annually stocks about 20,000 fingerling rainbow trout (*Oncorhynchus mykiss).* Starting in 2001, 1000 – 2000 Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri)* were stocked annually. In 2005, the Yellowstone cutthroat trout were replaced with westslope cutthroat trout (*Oncorhynchus clarki lewisi).* The proposal is to capture white suckers (*Catostomus commersoni*) during spring and summer trapping. Other capture techniques such as electrofishing may be used if appropriate. The suckers will be dispatched and their carcasses returned to Bair Reservoir in an attempt to temporarily improve the rainbow trout fishery.

B. Need for Action

Trout in Bair Reservoir have had chronically small size with poor condition and low relative weight (Wr). Relative weight measures fish fatness. Values near 100 indicate fish are in balance with their food supply and Wr less than 85 indicates underweight fish (Flickinger and Bulow 1993). Rainbow trout Wr in Bair Reservoir has been between 70 and 80 for over a decade and average total length about 10.5 inches (Tews and Horn 2005, Lewistown area data files). Over the last decade, white suckers also have had low Wr of 70 – 85 and mean total length of 11.3 inches. In 1972, Bair Reservoir was treated with rotenone to reduce white sucker numbers. In the late 1980's the fish in Bair Reservoir were killed due to extreme drawdown during drought. These treatments were not well analyzed, but it appears they did not result in long-term benefits to the trout fishery. Trout Wr after the 1972 and late1980s fish eradications were above 85 for 1 – 2 years.

Chemical treatment is no longer a feasible option for short-term benefits because of cost and environmental concerns. In an attempt to inexpensively reduce sucker numbers, they will be trapped, dispatched and carcasses returned to Bair Reservoir. The action will be temporary because additional suckers will enter Bair Reservoir from upstream and not all of the suckers will be removed. At Casino Creek Reservoir, trout fatness increased substantially and median rainbow trout size increased by about 4 inches in traps after suckers were removed with a similar treatment (Tews et al. 2004). At Ackley Lake, first year growth of rainbow trout increased from 4.2 inches in 2005 to 6.2 inches in 2006 and Wr increased from 78 to 84 after 14,900 lbs (8.2 tons) of suckers were dispatched and carcasses deposited in the reservoir (Tews and Horn, in preparation). Casino Creek Reservoir is an on-stream reservoir and walleye were also introduced, and Ackley Lake is an off-stream reservoir so results may differ substantially at Bair Reservoir. This is an experimental effort whose effectiveness will be evaluated by fall sampling of rainbow trout. If time permits, additional fish sampling, zooplankton sampling and food habits will be evaluated.

II. Impacts of the proposed action

Please review the attached checklist. The impacts of this action are included in the Environmental Assessment checklist and the following text addresses the impacts.

A. Impacts to the Physical Environment

1) Terrestrial and Aquatic Habitat: White sucker numbers will be temporarily reduced in Bair Reservoir. Trapping will not remove all of the suckers and additional suckers will enter the reservoir from upstream. It is hoped that sacrificing suckers and returning them to Bair Reservoir will result in better rainbow trout growth for at least one – two years.

2) Water quality, quantity and distribution: Sucker carcasses will be returned to Bair Reservoir to increase productivity and trout growth. This might result in a temporary increase in productivity in the lake. When 8.2 tons of suckers were placed in Ackley Lake there was not any obvious algae bloom or visual change in water quality.

5) Aesthetics: The suckers will be sunk in the water but under certain weather conditions it is likely at least some of the carcasses will rise to the water surface. This could temporarily impact smell and aesthetics. If trout eat the dead suckers, taste may be temporarily affected.

7) Unique, fragile and endangered resources: White suckers are abundant in many reservoirs and streams throughout northcentral Montana. They have adapted well to artificial reservoirs like Bair Reservoir and have overpopulated many similar reservoirs. There are no known species of special concern in the North Fork Musselshell River. Westslope cutthroat trout and Yellowstone Cutthroat trout have been stocked into Bair Reservoir. Sauger (*Sander canadense)* and blue sucker (*Cycleptus elongatus)* have been sampled in the lower reaches of the Musselshell over 200 miles downstream.

B. Impacts to the Human Environment

7) Access to and Quality of Recreational Activities: This project is being undertaken to improve the put and take rainbow trout fishery at Bair Reservoir. It is anticipated that rainbow trout size will increase for 1-2 years after this action is undertaken. If the sucker removals appear to be successful in increasing rainbow trout size they may be repeated at intervals in future years.

8) Demands on Government Services: This action will be undertaken by fisheries staff as part of normal field operations. This project will likely take 1 – 3 weeks each year it is undertaken. Other fisheries projects may be postponed. Evaluation of the effectiveness of the treatments will take additional time.

III. Discussion of Reasonable Alternatives

1) No Action: The "No Action" Alternative would not result in any impacts. The evaluation of sucker removal and impacts to trout fishery would not be completed. It is possible that sucker numbers would decline and rainbow trout condition would increase without the treatment.

2) Preferred Alterative: Dispatch suckers and sink the carcasses in Bair Reservoir as discussed in this document.

3) Chemical treatment: This is not a feasible option for temporary removals due to both direct costs and the amount of staff time that would be involved. Historically improvements to the fishery have been very short term after chemical treatments. Aesthetics would be much further impacted since carcasses would float to the top. The game fish in the reservoir would also be killed and the reservoir would likely be drawn down to the minimum pool for maximum use of the toxicant. It would take at least 1- 2 years for the trout fishery to become re-established.

4) Remove sucker carcasses from the reservoir. This alternative would remove much of the nutrient biomass from the reservoir and may be less likely to improve trout condition. Aesthetics should not be impacted at the reservoir since the carcasses would be hauled off-site. A sucker disposal site would be needed.

5) Introduce a predator to reduce sucker numbers: Several different fish species have been stocked in reservoirs to reduce sucker numbers with varying degrees of success. This may be a viable option and will be further evaluated in the future. Sterile tiger muskie (the F1 hybrid of female muskellunge, *Esox masquinongy* x male northern pike, *E. lucius*) may offer the best prospects. They have successfully reduced sucker numbers on other reservoirs in the Musselshell drainage (Frazer 2005) and will be further evaluated as a long-term control measure at Bair Reservoir.

IV. Environmental Assessment Conclusion Section

1) **Is an EIS required?** No, the action is expected to be minor and beneficial.

References:

Flickinger, S.A. and F.J Bulow. 1993. Small impoundments. Pages 469 – 492 in C.C. Kohler and W.A. Hubert, editors. Inland fisheries management in North America. American Fisheries Society, Bethesda, Maryland.

Frazer, Ken. 2005. Environmental Assessment – Introduction of tiger muskie into Lake Elmo and Lake Josephine as a biological control and to increase angling opportunity. Montana Fish, Wildlife and Parks, Billings, MT.

Tews, A.E and C. Horn. 2006. Lewistown area fisheries management. Montana Statewide fisheries management, 2005 report. Montana, Department of Fish, Wildlife and Parks. Job Progress Report.

Tews, A.E and C. Horn. In preparation. Lewistown area fisheries management. Montana Statewide fisheries management, 2006 report. Montana, Department of Fish, Wildlife and Parks. Job Progress Report.

Tews, A.E., D. Yerk, T. Horton and D. Moser. 2004. Statewide fisheries investigations, Northcentral Montana coldwater lake ecosystems. 2002 report. Montana, Department of Fish, Wildlife and Parks. Job Progress Report : F-113-R1; F-113-R2. Helena, MT